

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE	1 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS	511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	07/29/10

**PERMIT TO OPERATE EVALUATION
(LASER CUTTER, MATERIAL SIFTER AND HEPA FILTER)**

Applicant's Name	HENKEL CORP.
Company I.D.	157359
Mailing Address	20021 SUSANA ROAD, COMPTON, CA 90221
Equipment Address	SAME AS ABOVE

EQUIPMENT DESCRIPTION

APPLICATION NO. 511498 (P/O) (D47)

LASER CUTTING SYSTEM, RESONETICS, ELECTRICALLY POWERED, CONSISTING OF:

1. A CABINET, 5' – 4.5" L. X 3' – 9.4" W. X 6' – 3.7" H.
2. A LASER CUTTER, WITH A COHERANT DIAMOND K-2251 HEAD,

APPLICATION NO. 511501 (P/O) (D46)

CABINET, GLOVE BOX TYPE, TYLER, MODEL NO. R-30050 WITH A ULTRASONIC VIBRATORY CLASSIFYING SCREEN, TYLER, MODEL NO. RX-29 RO-TAP.

APPLICATION NO. 513886 (Modification, Previous A/N 493925, P/O) (C42)

DUST COLLECTOR, AIR CLEANING SOLUTION, MODEL MFC-1200/3, 2' – 3" W. X 2' – 6" L. X 3' – 3" H., WITH A WASHABLE PRE-FILTER, A HEPA FILTER OF 376 SQ. FT. TOTAL AND A 1.5 H.P. EXHAUST BLOWER.

APPLICATION NO. 512483

TITLE V/RECLAIM PERMIT REVISION

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE	2 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS	511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	07/29/10

HISTORY

Henkel Corp. submitted above applications for permits to operate a laser cutter, a glove-box type sifter for silver metal flakes and to modify the existing dust collector to vent the new sifter. The applicant currently operates a number of equipment (roller-coaters, coating-lines, afterburner, solvent still, sifter, HEPA filter, baghouses and ovens) under Title V/Reclaim permit (I. D. 157359) at this location.

The company manufactures adhesive backed films for the circuit board industries. It also produces silver-resin slurry used in electronic industries on this site, by mixing epoxy resin, silver and solvents such as acetone, MEK, NMP, etc. The coatings are applied on the coating lines and cured in the ovens. The ovens and the coating lines are vented to an afterburner. The Henkel Corp. facility in Compton has a facility-wide VOC emission limit of 118 pounds per day. This project is not expected to increase any VOC emissions.

The facility requires using same sized silver (powder) flakes in the mixing operation. They have installed an enclosed glove-box type cabinet with a sifter unit to eliminate oversized particles. This cabinet is vented to a dust collector to reduce particulate emissions and to collect the oversized silver particulates. The use of a HEPA filter unit to control the particulate emissions complies with the current BACT requirements. A laser-cutter is used to cut the film to correct shape and size per customer's specifications. The films are dried in ovens before cutting with the laser cutting equipment, thus no VOC (MEK) emissions are expected during the film cutting operation. On further review of the emissions from this laser cutter, the applicant decided not to vent it to the afterburner unit. The laser cutter and sifter unit are expected to emit a negligible quantity of particulate emissions.

The District database shows that the applicant has not received any odor nuisance or visible emission complaints from the public in the last two years. The company was not issued any notice of violation in the last two years. One notice to comply was issued (to apply for above permits) in the last two years. The company now operates in compliance with this notice. The facility is located within an industrial area. It is not located within 1000 feet from any school. Hence, these applications will not require public notification per Rule 212.

Henkel is a Title V facility. The first Title V permit was issued to this facility on 9/4/07 for change of operator from Ablestik Laboratories (ID# 73635), with their first revision issued on 8/27/08. The Title V renewal for the previous operator was issued on 7/9/06. The proposed permit revision is considered as a "de minimis significant permit revision" to the renewed Title V permit, as described in the Regulation XXX evaluation. This is the second revision since the TV permit was issued.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE	3 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS	511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	07/29/10

PROCESS DESCRIPTION

Henkel Corp. is a specialty adhesive-backed film manufacturing facility. The major portion of the business is film coating, where solvent-based coatings are applied onto a release liner called carrier web. These films possess special properties and are used in a wide variety of applications in micro-chip manufacturing.

The company also manufactures silver-resin slurry for the electronic industries. The mixers are exempt from permit requirement per Rule 219(k)(1) (brimful capacity of 55 gallons or less). These mixers are used to add powder additives and silver flakes in the liquid resin. The silver flakes are classified in the above described sifter unit. On average about 15 lbs (maximum 20 lbs) of silver flakes can be classified per hour in this unit. This enclosed unit is vented to a dust collector unit to control all the particulate emissions. The dust collector is equipped with a pressure gauge and an alarm to signal change of filter or clean the pre-filter.

Henkel Corp. uses a laser cutter to size the film manufactured at their site per customer's requirements. The laser beam moves along a programmed path on the flat film to obtain the desired cut. The laser beam from a stationary laser resonator is directed to a moving lens by two mirrors mounted on a moving gentry. The beam is concentrated on the work-piece by the lens. The film remains stationary while a narrow strip of film, approximately 0.01" width (maximum) is removed along the path made by the concentrated laser beam. The film gets melted by the energy of the beam. The molten film is removed with the aid of assist gas. The assist gas flows through the nozzle in the cutting head. Carbon dioxide is used for this purpose.

The laser beam is capable of cutting any film. However, the most common thickness is 0.001". The power supply provides a variable current output, which allows the operator wide variations in cutting speeds. Contouring accuracy is a function of the feed rate and the curvature of the path. The mirrors and lens are positioned to produce the programmed work piece geometry. The program specifies feed rate, laser power, assist gas and coolant.

OPERATING HOURS

Average : 8 hour/day, 5 day/week, 50 weeks/year
Maximum: 16 hour/day, 7 day/week, 52 weeks/year

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION <i>Large Coating, Printing and Chemical Operations Team</i> APPLICATION PROCESSING AND CALCULATIONS	PAGE 4 of 9 APP. NUMBERS 511498/500 PROCESSED BY SMP REVIEWED BY DATE 07/29/10
---	--

EMISSION EVALUATIONS

Application no. 511501 (Sifter)

The glove-box sifter unit handles dry powder of silver metal. It is used 1 hour per day. It emits particulate emissions which are controlled by a dust collector. The AP-42 emission factor for particulate emissions for usual material handling operation is 2 pounds/ton of material moved. A conservative 1% by weight particulate emission factor will be used for this calculation.

Avg. material processed	=	15 pounds/hour	
Max. material processed	=	20 pounds/hour	
PM emission factor	=	1% by weight	(assume PM =PM10)

Avg. uncontrolled PM/PM10 emissions = 15 X 0.01 = 0.15 lbs/hr

Max. uncontrolled PM/PM10 emissions = 20 X 0.01 = 0.20 lbs/hr

Application no. 513886 (Dust Collector)

Filter Area Ft ²	: 376 Ft ²
Dust Collection Efficiency of the exhaust	: 100.0%
Dust Removal Efficiency of the filter	: 99%
Exhaust Blower capacity	: 750 cfm
Dust collected	: in the filters

Avg. uncontrolled PM/PM10 emissions = 15 X 0.01 = 0.15 lbs/hr

Avg. controlled PM/PM10 emissions = 0.15 X 0.01 = 0.0015 lbs/hr

Max. uncontrolled PM/PM10 emissions = 20 X 0.01 = 0.20 lbs/hr

Max. controlled PM/PM10 emissions = 0.20 X 0.01 = 0.002 lbs/hr

Exhaust Air Particulate Emission Concentration (PC)

= R2 / Blower CFM x 7,000 grain/lb / 60 min/hr
= 0.002 / 750 CFM x 7000 /60 = 0.003 grain/cfm

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE	5 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS	511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	07/29/10

Air-to-filter ratio (A/C)

$$A/C = \text{Blower CFM} / \text{Filter Area} = 750/376 = 2 : 1$$

The filter device is capable of controlling the particulate emissions.

Application No. 511498 (Laser Cutter)

Film density (assumed)	=	0.001 lb/cu. in.
Maximum Film Thickness	=	0.02"
Maximum cut width	=	0.01"
Maximum cut in one hour	=	1000"

PM10 emissions = PM emissions.

Maximum PM/PM10 Emissions:

Assumed: 1000" cut is made on a 0.02" thick film in one hour.

$$\begin{aligned} \text{Total volume of the film removed by the cut} &= 0.02" \text{ deep} \times 0.01" \text{ wide} \times 1000" \text{ long} \\ &= 0.2 \text{ cu. in/hr} \end{aligned}$$

$$\begin{aligned} \text{Total weight of the film removed (PM/PM10)} &= 0.2 \text{ cu. in/hr} \times 0.001 \text{ lbs/1 cu. in.} \\ &= 0.0002 \text{ lbs/hr} \end{aligned}$$

This indicates that particulate emissions are expected to be negligible from this operation.

RULES/REGULATIONS EVALUATION

▣RULE 212, PUBLIC NOTIFICATION

√SECTION 212(c)(1):

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. These sources are not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE 6 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS 511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY
	DATE 07/29/10

✓ **SECTION 212(c)(2):**

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified by in the table below. As shown in the following table, the emission increases do not exceed the daily maximum limits. Therefore, these applications will not be subject to this section.

LB/DAY	CO	NOX	PM₁₀	ROG	SOx	Pb
MAX. LIMIT	220	40	30	30	60	3
INCREASES	0	0	0	0	0	0

✓ **SECTION 212(c)(3):**

There are no carcinogenic emissions involved in the above equipment. Therefore, these applications will not be subject to this section.

✓ **SECTION 212(g):**

This section requires a public notice for all new or modified permit units which have emission increases exceeding any of the daily maximums as specified below. As shown in the following table, the emission increases do not exceed the daily maximum limits. Therefore, these applications will not be subject to this section.

LB/DAY	CO	NOX	PM₁₀	ROG	SOx	Pb
MAX. LIMIT	220	40	30	30	60	3
INCREASES	0	0	0	0	0	0

☐ **RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE**

Compliance with these rules is expected with the proper operation of the equipment. No Complaints were found for this facility.

REGULATION XIII

☐ **RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

(a) **PM10 EMISSIONS**

Use of a dust collector with HEPA filter unit will satisfy current BACT requirements for sifter unit. The emissions from the film laser cutter are negligible (<0.5 lbs/day), thus BACT requirements are not triggered for laser cutter.

☐ **RULE 1303(b)(1), MODELING**

No detailed modeling analysis required for <0.41 lbs/hr PM10 emissions.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE	7 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS	511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	07/29/10

▣ **RULE 1303 (b)(2), EMISSION OFFSETS**

PM10 emissions are negligible, hence no offsets are required.

▣ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS**

There are no toxic emissions from this equipment. Thus, they comply with the rule requirements.

REGULATION XXX

This facility is in the RECLAIM program. The proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a “minor permit revision” for RECLAIM pollutants to the RECLAIM/Title V permit for this facility.

Non-RECLAIM Pollutants or HAPs

Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases of non-RECLAIM pollutants or HAPs from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

<u>Air Contaminant</u>	Daily Maximum (lbs/day)
HAP	30
VOC	30
NO _x *	40
PM ₁₀	30
SO _x *	60
CO	220

* Not applicable if this is a RECLAIM pollutant

To determine if a project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs, emission increases for non-RECLAIM pollutants or HAPs resulting from all permit revisions that are made after the issuance of the initial Title V permit shall be accumulated and compared to the above threshold levels. This proposed project is the 3rd permit revision to the renewed Title V permit issued to this facility on February 4, 2007. The following table summarizes the cumulative emission increases resulting from all permit revisions since the initial Title V permit was issued:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE 8 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS 511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY
	DATE 07/29/10

Revision	HAP	VOC	NO_x	PM₁₀	SO_x	CO
1 st administrative revision for change of ownership from Ablestik to Henkel Corp. on April 24, 2009.	0	0	0	0	0	0
2 nd Revision: Install RTO (A/N 496380), and baghouses (A/N 496382/4).	0	0	8	0	0	0
3 rd Revision: Install laser cutter (A/N 511498), sifter screen (A/N 511501) and modify HEPA filter unit (A/N 513886).	0	0	0	0	0	0
Cumulative Total	0	0	8	0	0	0
Maximum Daily	30	30	40	30	60	220

*RECLAIM pollutant, not subject to emission accumulation requirements

Since the cumulative emission increases resulting from all permit revisions are not greater than any of the emission threshold levels, this proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or HAPs.

RECLAIM Pollutants

Rule 3000(b)(12)(A)(v) defines a “minor permit revision” as any Title V permit revision that does not result in an emission increase of RECLAIM pollutants over the facility starting Allocation plus non-tradable Allocations, or higher Allocation amount which has previously undergone a significant permit revision process.

Since NO_x is a RECLAIM pollutant for this facility, a separate analysis shall be made to determine if the proposed permit revision is considered a “minor permit revision” for RECLAIM pollutants. Section B of the Title V permit shows that this facility’s NO_x starting Allocation plus the non-tradable Allocation is 8701 pounds. The proposed project is not expected to increase any NO_x emissions from this permit revision. As a result, this proposed project is considered as a “minor permit revision” for RECLAIM pollutants.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGE	9 of 9
ENGINEERING AND COMPLIANCE DIVISION	APP. NUMBERS	511498/500
<i>Large Coating, Printing and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	07/29/10

RECOMMENDATION

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision” for non-RECLAIM pollutants or hazardous air pollutants (HAPs), and a “minor permit revision” for RECLAIM pollutants, it is exempt from the public participation requirements under Rule 3006(b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j). If EPA does not have any objections within the review period, a revised Title V/RECLAIM permit will be issued to this facility.